
MEASURING THE EFFECTIVENESS OF PUBLIC PROCUREMENT



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ABSTRACT

Measuring and reporting the effectiveness of procurement is a new challenge in the field of purchasing. In many organizations the effects of purchasing have not been determined or evaluated. The procurement effectiveness reporting tool will produce information on the effects of procurement that can be then used in developing the purchasing activities in an organization.

This thesis gives the reader an example of an approach on how to measure and report procurement effectiveness through different variables. The commissioning organization was VTT Technical Research Centre of Finland and the reporting tool was created and customized for their needs.

The following objectives were determined: defining different methods of measuring procurement effectiveness (1), creation of a procurement effectiveness reporting tool aligned with the corporate and procurement strategies (2) and drawing development plans for effectiveness reporting (3). The procurement effectiveness reporting tool focused on developing effectiveness factors that can be evaluated by using an evaluation scale. The aim of the research was to create a tool for the needs of the commissioning organization.

The theoretical background was established by acquiring information from literature, previous research and professional journals. The theory was used for applying ideas and methods to develop the reporting tool. Internal interviews and workshops were used to scan the challenges and issues with the current reporting tool. External interviews were used to find new ideas and concepts that could be applied to the reporting.

Through the conducted research, a procurement effectiveness tool was created that fitted the needs of the commissioning organization. The tool focused on evaluating the other effects of procurement and on creating a common alignment for determining the cost savings produced.

Keywords reporting, effectiveness, purchasing

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TIIVISTELMÄ

Hankintojen vaikuttavuuden arviointi ja raportointi on uusi haaste hankintojen johtamisen alueella. Hankintojen vaikutukset jäävät useasti mitaamatta tai arvioimatta. Hankintojen vaikuttavuusraportointityökalu tuottaa tietoa, jota voidaan hyödyntää organisaation hankintaprosessien kehittämisessä.

Opinnäytetyö antaa esimerkin toimintamallista kuinka hankintojen vaikuttavuutta voidaan mitata ja raportoida erilaisten muuttujien avulla. Toimeksiantajayritys oli Teknologian tutkimuskeskus VTT ja raportointityökalu luotiin ja räätälöitiin vastaamaan heidän tarpeitaan.

Opinnäytetyön tavoitteena oli määritellä ja analysoida erilaisia hankintojen vaikuttavuuden raportointimalleja (1), luoda raportointityökalu, joka linjattiin yritys- ja hankintastrategian kanssa (2) ja luoda kehityssuunnitelmia vaikuttavuusraportoinnille (3). Hankintojen vaikuttavuusraportointityökalu keskittyi arvioimaan vaikuttavuustekijöitä arviointiasteikon avulla. Työn tarkoitus oli luoda yrityksen tarpeisiin sopiva työkalu.

Teoreettinen tutkimustausta luotiin tutkimalla kirjallisuutta, aikaisemmin tehtyjä tutkimuksia sekä ammattijulkaisuja. Teoriaa sovellettiin raportointityökalun kehittämiseksi. Sisäisiä haastatteluja ja tapaamisia käytettiin nykyisen työkalun haasteiden ja ongelmien kartoittamiseksi. Ulkoisia haastatteluja hyödynnettiin uusien ideoiden ja mallien löytämiseksi, joita voitaisiin soveltaa raportoinnissa.

Tehdyn tutkimuksen kautta luotiin uusi hankintojen vaikuttavuusraportointityökalu, joka vastaa toimeksiantajayrityksen tarpeita. Työkalu keskittyi arvioimaan hankintojen muita vaikutuksia sekä luomaan yhteisen linjauksen kustannussäätöjen määrittämiseen.

Avainsanat raportointi, vaikuttavuus, ostot

Sivut 42 s.

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Appendix 1 Procurement effectiveness tool (Confidential)

1 ABBREVIATIONS USED HERE

Contracting authority

A contracting authority is explained by the following. “(1) State and municipal authorities and joint municipal authorities; (2) The Evangelic Lutheran Church and the Orthodox Church and parishes and other authorities thereof; (3) State enterprises in accordance with the State Enterprise Act (1185/2002); (4) Bodies governed by public law, meaning legal persons established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character. “
(Act on Public Contracts 2007/348)

ERP

Enterprise Resource Planning program used in the organisation.

FinElib

A consortium of different kind of research entities, Finnish universities and universities of applied sciences, public and special libraries.

Framework agreement

A framework agreement is an agreement with one or several suppliers for the procured item with a certain period of time.

Direct contract award

The contracting authority acquires the product from a selected supplier directly without organising competitive tendering process. Grounds for the direct contract award must be identified.

Hansel Oy

A government owned central procurement body for the Finnish state entities.

Doha

An online document library used in the organisation where documents are saved, so that they are easily accessible to all the employees.

Selection criterion

The selection criterion refers to the supplier selection that is done when checking the offers submitted for the tender competition. The tenders that fulfil the minimum requirements for the tender shall be compared against each other on the basis of the provided selection criteria for the quality assessment.

Supplier

A person or an entity who offers a product or a service on the market.

Tender competition

A competitive bidding process that has been organised by the contracting authority to acquire a product or a service. The tender competition can be either organised as a national or EU on depending on the value of the purchase. The threshold for national public tenders is €30,000 and for EU tenders it is €130,000.

Tenderer

“A supplier who has submitted a tender. “
(Act on Public Contracts 2007/348)

VTT

VTT Technical Research Centre of Finland, the commissioning organisation.

Weight values

Weight values are given to the selection criteria that have been determined for the quality assessment. Different weightings can be given to different factors according to order of importance that has been decided by the contracting authority. An example of a weight value is a weighting of 10 per cent that is given to regarding environmental issues. The weight values express the factors that the contracting authorities appreciate.

2 INTRODUCTION

2.1 Topic background

Measuring procurement effectiveness has always been an interesting topic for organisations and corporations. The pressure of reporting of the effects of the procurement function to the management is high and in many cases related to the personal performance targets of procurement staff.

It is not that easy to determine the numerical estimation of cost savings produced. That's why it is crucial to take into account all the other factors that might influence the effectiveness of procurement. These factors may include issues such as a new service model, better payment terms or a decreased number of suppliers.

VTT Technical Research Centre of Finland has not been able to produce accurate or reliable findings on the effects of their purchasing at the level that they need and want to perform.

Until now the different portfolio managers have been responsible for determining the cost savings and other effects of procurement on their own. In many cases the portfolio managers have felt that finding accurate numbers to be a difficult task. Also identifying other effects that the new contract holds, has proven to be challenging. The procurement manager may have been struggling to provide information on the cost savings and other effects of procurement to the senior vice president of finance.

The organisation wishes to develop a common approach for reporting procurement effectiveness. Through my empirical research, the organisation can develop their procurement effectiveness reporting to be more user-friendly so that the portfolio managers can utilise the tool upon the creation of a new contract.

One of the tasks of the procurement manager is to report the cost savings and other effects of purchasing annually to the senior vice president of finance who can then report the results to the top management of the organisation. This is why it is important that presentation material can be produced from the results of the effectiveness of procurement.

2.2 Research question and objectives

The research question of my research project can be summarised into the following. “How can effectiveness of procurement be measured at VTT Technical Research Centre of Finland?” The final thesis will answer this question by first acquiring a theoretical approach on how procurement effectiveness can be measured and how to increase the effectiveness and cost efficiency of public procurement. The latter part of my thesis introduces the procurement effectiveness reporting tool that was created and gives practical development and improvement ideas that can be utilised in the organisation later on.

Describing the theory behind measuring procurement effectiveness can be identified to be one of the objectives of my final thesis. The theoretical research will provide a background to the development ideas for the organisation to implement in practise. The issues discussed include research on the theory of how procurement effectiveness can be measured and the means to report procurement effectiveness.

Analysing the different methods to determine procurement effectiveness and how they can be applied to the needs of the commissioning organisation was one of the objectives of the thesis. The analysis includes explanations on why the method is applicable or why not.

One of the objectives is to develop an alignment with the corporate and procurement strategies that would provide a basis for effectiveness reporting. The factors and determinants of procurement effectiveness can be derived from the objectives and means of the corporate and procurement strategies.

The main objective of the thesis was to create a procurement effectiveness reporting tool that the organisation could start using in practise. The tool should provide information on the effects of procurement that can be then reported to the senior vice president of finance and to the top management of VTT.

Another objective was to find development ideas for the commissioning organisation to use for developign their procurement effectiveness reporting. The organisation wants to develop a common approach for procurement effectiveness reporting that would be user friendly and produce results that could be easily reported to the management of the organisation.

2.3 Research methods

I have applied a variety of different kinds of methods for collecting information. I used desk research to acquire theoretical information. Books, magazines, articles, previously conducted researches, journals, websites and online books as well as laws and regulation texts were used. The thorough research on the theoretical background of measuring procurement effectiveness gave a basis for the empirical research.

For the empirical research field research was used to support my findings. I have conducted interviews and arranged internal meetings in the organisation to discuss and get feedback for my development ideas. I also contacted professionals external to the case organisation in the field of public procurement to find fresh ideas and receive examples on reporting procurement effectiveness.

Organising workshops to develop the procurement effectiveness reporting tool made it possible to gather different ideas and suggestions. It also gave an opportunity to discuss the benefits and downfalls of the current reporting tool. This way an analysis was done on the factors and issues that should be improved and developed further. The workshop allowed hearing the opinions of the portfolio managers, the people responsible for the reporting. This ensured that the new tool would meet the needs and requirements of VTT.

3 INTRODUCTION OF PUBLIC PROCUREMENT

3.1 Definition of public procurement and Hansel

Public procurement means purchasing of goods, services or public works contracts by the contracting authorities that have been defined in the procurement law. Public procurement must follow the procedures that are stated in the law. The aim of these procedures is to ensure the efficient use of public funds.

(Ministry of employment and the economy 2011.)

The value of public procurement in Finland reaches up to billions of euros every year. The procurement law obliges the contracting authorities to inform about each purchase that exceeds the amount of EUR 30,000 with some exceptions to the rule. The procurement information notices are placed in HILMA, the Finnish electronic information channel.

(Ministry of employment and the economy 2011.)

Hansel is a government owned central procurement body for the Finnish state entities. The main task of Hansel is arranging framework contracts for all the state authorities to use. A framework agreement is an agreement with the central procurement unit, Hansel and one or several suppliers. The contract defines the conditions for the procured item with a certain period of time.

(Hansel 2011).

Ministries and their subordinate offices as well as government agencies are common examples of Hansel's customers. Hansel's customers have the right to join the framework agreements made by Hansel without organising their own tender competition. This saves time and resources for the state entities with routine products and services that include things such as travelling services and IT products. Hansel also offers advisory services that the customers can utilise as a help in their own tender processes. (Hansel 2011.)

One of the aims of Hansel's business operations is to increase the productivity and effectiveness of public procurement. This can be achieved through arranging framework agreements that will produce cost savings for the Finnish government. The objective of Hansel's operations is also clearly defined in the Public Procurement Act. It includes promoting open competition and organising tender competitions in a matter that boosts efficient market operations. (Hansel 2011).

3.2 Public procurement law

Procurement law was drawn to make the public procurement more effective and cost efficient. It also improves the process of purchasing quality products and increases fair competition between different companies and organizations in the market. The main principles in public procurement include organizing the procurement operations in such a way that they produce the most cost efficient and well-planned results and taking into account the environmental issues. The procurement process has to be implemented on a fair basis openly without discriminating any of the participants. Framework agreements and joint procurement can be used as a tool for reducing administrative work. (Act on Public Contracts 2007/348.)

The different variations of public contracts such as public works contracts, public supply contracts and public service contracts are defined in detail in the procurement law. Also other definitions such as "supplier" and "tenderer" are specified to avoid the possible misunderstandings. Restricted and negotiated procedures are examples of procurement procedures that need to be taken into account when organizing public procurement. Technical standards and specifications have been set up to define the technical requirements that need to be met. (Act on Public Contracts 2007/348.)

Contracting authorities including state and municipal authorities, the Evangelic Lutheran Church, state enterprises and bodies that are governed by public law are determined in the procurement law. The threshold for national public tenders is EUR 30,000 and for EU tenders it is EUR 130,000. (Act on Public Contracts 2007/348.)

The procurement law clearly defines the procedures for contract awards. Different kind of methods can be applied when the requirements are fulfilled. The available options include a negotiated procedure, a direct award of contracts, a competitive dialogue, a framework agreement and design contests. Chapter six in procurement law notes the specific requirements concerning publication. Prior information notice, contract notice and contract award notice and possible other notices depending on the method of contract award need to be published by the contracting authorities. An important factor to be considered is fixing the appropriate time limits for a tender. The time limits can be shortened or extended when the arguments respond to the requirements.

(Act on Public Contracts 2007/348).

The information in tender invitations needs to be stated clearly to avoid misunderstandings and misinterpretations to ensure mutually comparable offers. The contents of tender invitations and definition of the object of the contract can be found in seven in the procurement law. The selection of candidates and tenderers is done through a verification process that begins with a categorizing of whether the candidates are suitable or not. After that the contracting authorities can exclude tenderers from the tender competition if they meet the exclusion criteria.

(Act on Public Contracts 2007/348).

Measuring the suitability of the candidates is based on the financial situation of the tenderer as well as their technical performance and professional qualifications. The contracting authorities must select the offer that presents the economically most advantageous solution or the selection can be made based on the lowest price. The last part of the procurement law concerns issues like award contract decisions, contract documents and remedy procedures.

(Act on Public Contracts 2007/348).

3.2.1 The effectiveness of the EU directives

A study has been made by the European Commission in 2010 on the effectiveness of the EU directives on public procurement. The study gave some critical points that should be considered in the future when making changes to the EU directives on public procurement. The research question covered areas concerning the EU procurement legislation objectives and whether they have been met and how relevant they are in the changing context.

(European Commission 2010).

Promoting an efficient procurement process across the EU borders was one of the objectives of the EU legislation. The aim was to encourage accessibility of the EU public procurement market to make it more attractive for organisations situated in the EU. Another objective was to reduce the transaction costs to the minimum to deliver the best value for money which would result in the best procurement solution. Discovering a balance between costs and benefits and assisting in the process of fighting

against corruption of the EU directives was also an additional aim in the study.
(European Commission 2010).

A drive towards low budget solutions and the focus on value for money remains a relevant objective. Since the evaluation showed that there is still room for improvement with the barrier issues, it clearly stated the relevance of this objective. The need for utilities directive should be taken into consideration as it shows lack of relevance in some of the circumstances.
(European Commission 2010.)

One of the factors that were raised was that there were inconsistencies in the policy approach of the EU Commission to public procurement. The pressure to achieve the lowest price in public procurement was also criticised mainly because of the lack of focus to other policy areas such social, decent working conditions and employee objectives.
(European Commission 2010.)

Objectives towards more sustainable development have been set up by many member states but these plans are missing on the social side. A majority of member states have tried to take a greener approach towards public procurement which will result in more sustainable contract awards. Upgrading the system will generate additional costs and make the procurement process more complex. The requirements need to comply in all the member states or else the suppliers have to face different standards depending on the member state which can also cause a reduced potential for economies of scale.
(European Commission 2010).

3.3 Organizing procurement

Organising procurement processes is essential for achieving the most profitable solutions to benefit from supplier relationships and to optimize total costs of the procurement function. There are different models of organising procurement available: centralised, decentralised, hybrid and centred procurement.
(Iloranta 2008, 158-161.)

The organisation of the procurement function varies between different organisations. In most cases, the organisation has its own procurement function which serves 80% of the total acquisitions. The direction of development in the future aims at taking the controlling and management of procurement under a centralised procurement function.
(Iloranta 2008, 88.)

The procurement processes can be divided into three categories: strategic, tactic also known as control level and operative categories. Strategic procurement includes planning and controlling operations as well as human resource management and is estimated to take 14 % of the procurement staff's time. Tactical procurement involves tasks that concern supplier relationship management. An estimated 34% of procurement resources fall

under the tactical procurement. Operative procurement has the biggest share what comes to measuring how much of the resources it accounts for, with a 47 % share. Making orders and organising transportation are both time consuming tasks of operational procurement. (Iloranta 2008, 89-90).

The most common issues that operative procurement staff has to face are the constant rush and lack of operational planning. Other issues that make the work more difficult are a shortage of demand forecasts and a poor quality as well as a poor information flow within the organisation. The information system rarely supports the work of the procurement function and thus is a typical source for development. (Iloranta 2008, 89-90).

The different models of organising procurement include centralised, decentralised, hybrid and centre-led procurement models. The principle of the centralised procurement function is that one buyer can make a purchase based on an appearing need and he or she can independently acquire the product. This can cause some issues when the buyer can interpret the benefits of the product on behalf of the organisation and user. Centralised procurement allows acquiring scarce sources and helps you to find future prospects to consolidate your spend. The organisation has the possibility for purchasing bigger quantities which will result in lower prices and cost savings. (Iloranta 2008, 159-162).

Decentralisation of procurement means that the purchasing function is divided into different parts along with the other departments and processes in the organisation. Procurement is often organised in a way that it is in close cooperation with production, IT and property management. Decision making in the decentralised model is divided between the different units of the organisation. This will be followed by a direct responsibility on each unit whether they are generating profits or losses. The suppliers have a close relationship with the actual user of a product or service. This will benefit the organisation since the supplier is involved in product development projects. (Iloranta 2008, 159-162).

The hybrid procurement model is a variant of the two extreme options of organising procurement function. It combines the benefits from both the centralised and decentralised models and builds up a new approach towards procurement. In many cases when an organisation uses the hybrid procurement model, tender competitions are organised centrally, but smaller purchases are decentralised to different units. (Iloranta 2008, 162).

The centre-led procurement model serves not only the needs of the business but also the needs of a specific service and product category. In centre-led procurement the procurement model is chosen based on what is best in the situation. The product, the user and the location are the factors that determine, which procurement model will be applied. The centre-led

procurement does not need a physical location; it can be executed where the purchasing makes most sense.
(Stephens 2005.)

Through centre-led procurement it is possible to conduct and improve local and central procurement processes. CLP gives the central procurement function influential power over the distributed processes that are not directly controlled by them. This can be achieved by encouraging the use of better practises in the distributed units. The policy, operating models and measurement systems in procurement need to be re-engineered and redeveloped to ensure a maximization of cost savings when applying CLP.
(Stephens 2005.)

3.4 Innovative procurement

Innovative procurement stands for an organisation's ability to create procurement entities that include components of creativity and knowhow. The responsibility for constant development and cooperation to support it should be taken as a criterion for public procurement. This will increase the productivity in the organisation's value chain and give additional value to its competitiveness.
(Yliherva 2006, 30.)

The present content of procurement and the selection criteria do not encourage developing knowhow, procedures or the product itself as it is indicated in the Figure 1. Elements of cooperation are not included into the contract made with suppliers. This will result in a higher number short-term supplier relationships and a short demand view. The invitations for tenders are very precise and leave small room for offer innovative solutions. The division of risks and benefits is not equalised.
(Yliherva 2006, 13-14.)

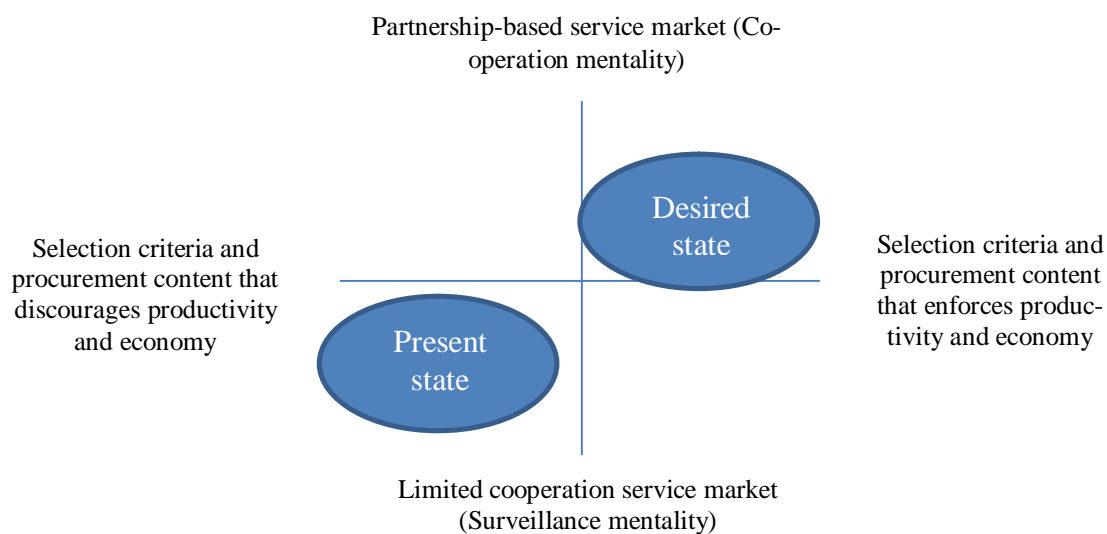


Figure 1 The present and desired state of the relationship with cooperation and procurement from the innovation perspective. Yliherva 2006, 56.

The common drivers of the development of the procurement function include the increased emphasis on the strategy of procurement. Instead of looking at the cheapest price, the greater picture of the total costs is identified. Cooperation and partnerships with suppliers increases for example in the form of common development projects. The concentration on a smaller amount of suppliers helps to control the transaction costs, which presents another future driver. The information flow develops to a more open and transparent way of exchange. The problem solving is executed together with the supplier which shortens the delivery cycles. (Yliherva 2006, 56).

Innovation can have an influential role in the procurement process, for example in the definition of the contents of the procured item and its goals. This stage is crucial for the innovation perspective because it determines the factors that will release or lock the usability of creativity and knowhow. The content of the purchased item is often described in too much detail. On the contrary, the aims and goals of the procured item and how the item is connected to the whole service picture are often left out from the definition. (Halme & Kotilainen 2008, 68).

In many cases, the contracting authority mentions that alternative solutions and offers are not accepted which limits the creativity of the suppliers. When more room is left for creativity, the productivity can be increased through new ideas and solutions. This can be achieved through emphasising the development responsibility and the effects of the procured item. The goals for development can include issues such as advancements in technology, improving the cooperation between logistics and procurement functions or enhancing the processes and procedures of the product. (Halme & Kotilainen 2008, 68).

Defining the selection criteria is essential for ensuring that the needed services will meet the requirements and needs of the buying organisation. Therefore emphasis on the determination of the weight values should be established. When the service and its goals require more immaterial wealth, placing more emphasis on the quality weight values is worthwhile. On the contrary when the acquired service is a routine job, the price can have a bigger role in the definition of the weight values. In many cases the opportunity to use innovation and cooperation ability as one of the subcategories of quality weight values isn't utilised. This offers another opportunity to use innovation in the procurement process of the organisation. (Yliherva 2006, 67-68).

In procurement items where the organisation wants to establish a close cooperation relationship, the contract draft should be published as an attachment with the invitation for tender. This will form a two way discussion with the suppliers about the content and aims and goals that the procurement wants to achieve. Incentives and earning models are important factors of forming a close cooperation tie to suppliers. This can be achieved through a bonus and sanction system that is defined in detail in the contract. (Yliherva 2006, 70.)

For example, one of the aims of the organisation could focus on supplier's ability to improve the service description so that it would become more productive and profitable so that the procurement could be done cheaper the next time. If the supplier achieves this aim, the organisation can reward them with a bonus or on the other hand, in the case of failure, the organisation can perform a sanction to the supplier. This has proven to be an effective way to use the innovation that the supplier can offer in an effective matter.

(Yliherva 2006, 70-71).

4 MEASURING PROCUREMENT EFFECTIVENESS

Measuring procurement effectiveness can be explained through three important factors; the effect on organisation's economic performance, the effectiveness of supplier relationship management and how procurement correlates with the organisation's corporate strategy.

4.1 Effect on organisation's performance

The development of procurement function and its effects on organisation's performance depend on two factors; the monetary value and the cost saving opportunities. Especially when the value and volume of the purchases is high, the opportunities to save money should be utilised. Efficient development of the procurement function can prove to be very financially profitable and result in higher profits for the organisation.

(Iloranta 2008, 102.)

In the simplest terms, defining the value of the purchase is done by calculating the prices of the purchased goods and services together which will result in the total monetary value.

(Iloranta 2008, 102.)

Procurement activities have a relation to the organisation's economic performance. This can be divided to effects on turnover, gross profit, efficiency, total costs and organisation's equity. All of these categories correlate directly with how the supplier relations are controlled and utilised for the benefit of the organisation.

(Iloranta 2008, 104.)

When the outsourcing activities account to a large part of the turnover, the influence of procurement function in organisation's economic performance is also bigger. How the procurement is handled in an organisation becomes highlighted when it has an effect on the competitive advantage. This concerns situations where the prices of materials fluctuate in short-term, innovation is involved with the purchased products or the competition of the end-products is intense.

(Iloranta 2008, 107.)

Choosing the supplier, product or subcontractor has an essential role in the potential growth of turnover. How the organisation's brand is perceived in the market affects the sales numbers. Sometimes the buyer can feel that they are receiving a better product because of a good brand image. This means that the supplier can actually have a positive impact on the decision made by the buyer. It's important not to forget the power of word of mouth marketing. It's a factor that can determine whether your product gets chosen over the competitor's one.
(Iloranta 2008, 103.)

Selecting the right supplier can help the organisation to access the newest high technology that will help you to have an edge in sales. For example when an organisation is starting its international business operations, it might be a crucial decision to select local suppliers to ensure its market share in the market. The growth of gross profit can be explained through cost reduction and increased turnover.
(Iloranta 2008, 103.)

The faster tempo of the business life has a direct impact on the effectiveness of procurement function. The faster rhythm correlates to faster flow of goods and cash. The competition in the market is growing and largely depends on how the supplier network is organised and utilised. The time frames for product development and product launch are continually shortening. The ability to use and direct the supplier markets for the benefit of the organisation has an important role on the organisation's success.
(Iloranta 2008, 104.)

The growing needs from the customers for product specialisation and tailoring need to be answered without expanding the time frames for delivery. It's often thought that the production of products limits the delivery process. This is not the case, the issues concerning supply chain especially moving product raw materials or semi-finished products proves to be a factor that prolongs the delivery time for customers. The organisations that can cut down the time spend for supply chain process is more likely to succeed.
(Iloranta 2008, 104.)

Procurement has direct and indirect costs that clearly affect the effectiveness. The organisational structure, division of work and operation efficiency; are components that modify the effectiveness of procurement function. The procurement processes and procedures have a close relation to other functions on the organisation and on their efficiency as well. As an example, improvements in quality issues and on the delivery times reflect to the total costs on the logistics and production side. Reducing the total costs can be perceived as reduced quality of products. Cost efficient procurement doesn't imply that the quality of products would decrease.
(Iloranta 2008, 105.)

The efficient use of procurement methods is an answer to releasing the organisation's capital. Controlling financial assets can be executed by balancing the payment terms between the sales of assets and purchases of debt providing the economically most advantageous solution. Correct con-

trolling of components like investment and property management influences the release of capital when the knowhow of procurement staff is used properly. This will result in reduction of invested capital and depreciation of products. Using the supplier network as a tool to outsource parts of production or supply chain to supplier will give an opportunity to release capital. This won't change the capital structure of the organisation in any way.

(Beer 2011, 22).

4.2 Total cost of ownership

The understanding of the total costs of procurement is essential. The cheapest price is not the only parameter that should be considered. The prices of the transportation and labour as well as the long-term total costs need to be taken into account when making purchase decisions. A cheaper product could increase the costs of repair and maintenance. In many cases, the long-term total costs weigh much more in the procurement decision than the immediate costs.

(Ellram 1993, 164).

Measuring and evaluating the total costs often can be hard to determine. Especially in cases where a large part of the total costs becomes from labour that is executed later on, defining the total costs can be difficult. The support of the reporting systems on total cost clarification is rarely available.

(Iloranta 2008, 185).

The total cost of ownership is based on activity based costing. Activity based costing means that for every function, process or task, it is possible to determine the time and costs.

(Iloranta 2008, 186).

The definition of total cost ownership is calculating the total costs of a product, service or capital goods that come during its life cycle. Direct and indirect costs account to total costs analysis. Providing alternative scenarios for product or supplier replacement and including all the cost components of the product are measures that will ensure thorough analysis results. The importance of the effects of procurement varies between the different business models.

(Iloranta 2008, 186).

A way to describe the total costs is to categorise them into three subgroups. These subgroups are; the costs before acquiring the purchase, the costs that relate to the purchase and the post-acquisition costs. There are different issues that account to each subgroup. With the help of these factors, the tasks of the procurement function become easier to achieve.

(Ellram 1993, 165-166).

Identifying the need and conducting a demand analysis should be drafted before purchasing the good or service. Before purchasing the good carrying out a thorough supplier search that includes a measurement and quality

assurance analysis, helps to determine pre-purchase total costs. Supplier selection and development plan belong to the factors that cause costs before purchasing the product.
(Ellram 1993, 165-166).

The price and ordering process are the main indicators of costs that account during the purchase process. Other cost components include the information flow between parties and the delivery arrangements. Careful supervision and follow up as well as payment process can bring additional costs.
(Ellram 1993, 165-166).

False products and retuning procedures are examples of costs that can arise after the purchase. Extra costs can occur from repairing, reworking, maintenance and spare parts. The cooperation with the supplier which can take place in the forms of product development and supplier knowhow utilisation are examples of costs that can arise after the purchase. Increased sales profits and depreciation are post-acquisition costs. With the processes of recycling and ending the life cycle of total costs the post-purchase costs might be increased.
(Ellram 1993, 165-166).

When total costs analysis is done well, it can provide an information source for many tasks that involve procurement or supply chain. The supplier evaluations and selection is more reliable and justified. The definition of the procurement object and screening alternative scenarios is easier to execute. Other factors that become more visible are the supplier performance tracking and assessment.
(Iloranta 2008, 189).

Decisions concerning outsourcing activities and development of procedures and service processes are other examples that are influenced by the total costs analysis. The development of the end product or service is more effective thanks to the total costs research. The total cost analysis is a powerful tool in the negotiations against the suppliers.
(Ellram 1995, 7-8).

4.2.1 Categorising total costs

Total costs can be categorised based on the decision criteria. The decision criterion depends on the objective and the relative size of the procurement. The organisation's knowhow and competencies also reflect on the chosen category. Six different categories are available; absolute price, intuition, objective comparison, ad hoc total costs, formal total costs analysis process and regular monitoring and controlling of total costs.
(Iloranta 2008, 191.)

The first category is the absolute price which can be implemented when it is a standard product or the product requirements or specifications are low. When intuition decision making is used the decision is based on personal conceptions or slight differences between the alternatives. Usually in these

cases, costs of the product are not seen as an important factor. The selection is dependent on versatile objective information when objective comparison decision category is applied. Only direct costs are accounted such as product specification or procurement costs.
(Iloranta 2008, 191.)

When a decision is reached through project or incident basis, it falls down to ad hoc category. These decisions are usually in a situation where the need for the product is immediate for example an instant need for a screw to carry on the work. Formal total costs analysis process has been build up in an organisation that involves reviewing all the available data implies to the fifth category. There are certain procedures that need to be followed in the determination process of total costs. Regular monitoring and controlling of total costs means that the total costs analysis is utilised continuously to measure supplier effectiveness.
(Iloranta 2008, 191.)

4.2.2 Calculating total costs

There exist two ways of dealing with total costs calculations; the monetary approach and the value approach. From these two, approach based on the monetary values of the purchase is more well-known and used. Both of the methods have their advantages and disadvantages. It is up to the organisation to decide how deep analysis they want to execute and which approach will provide the best results in that case.
(Iloranta 2008, 192).

Total costs calculations are important when the purchases have a big financial value to the organisation. In these cases, the monetary value approach provides an accurate view of the total costs. Using total costs identification with procurement items that include numeral indirect costs such as administration costs gives a more clear idea about all the cost components that should be accounted.
(Iloranta 2008, 192).

The monetary approach concentrates on calculating the total costs components for alternative products or services. The total cost components are real or estimated values. The data gathered through activity based cost analysis can be utilised as a base for the monetary approach. One of the disadvantages of this method is that it is time consuming. However, the information is accurate and easy to interpret and serves a good basis for future cost calculations. Both costs and profits can be taken into account when conducting monetary total costs calculation. Profits can be an outcome of product development or increase of sales and are targeted as reimbursement.
(Ellram 1995, 11).

One of the benefits of monetary approach is that the calculations can be done on a situational basis and many different floating factors can be included. The overview on the total costs of the organisation becomes clearer and cost drivers can be identified. One of the disadvantages of this

method is that it is time consuming and doesn't present the most cost efficient way of determining the total costs. However, the information is accurate and easy to interpret and serves a good basis for future cost calculations.

(Ellram 1995, 11).

The value approach goes a bit further and is a combination of the monetary method with an assessment of the supplier's performance in quality terms. The value method needs at least two or more options to be able to produce a relative comparison. The comparison is not based on real total costs. When utilising the value approach, some or all of the total cost components are evaluated on scaled ratios that are based on the supplier's performance.

(Ellram 1995, 12-14).

The value based total costs analysis is an excellent assessment tool when the quality has an important role. When information about supplier's performance is available, the value method gives an opportunity to use this information in a repetitive and routine way. Time is a restraint due to the fact that, planning and introduction require a lot of time to achieve wanted results. Defining the scaled ratios in an organised and accurate way so that it supports needs and goals of the specification is not an easy task. Subjectivity and extra weight on the most fresh experiences and observations is a common problem that should be avoided when conducting value approach.

(Ellram 1995, 12-14).

4.2.3 Total cost structure of the supplier

Modelling the total cost structure of the supplier begins with identifying the cost components and the factors behind them. Also understanding how the different parts relate to each other will help with the process of determining the cost structure. Taking into account the supplier's side has an important role with procurement items that involve strategic and service products and complicated entities.

(Iloranta 2008, 197-199).

4.3 Supplier relationship management

Effective supplier management can make the procurement process more cost and time efficient. Having supply market intelligence and applying a correct competition situation are ways to implement a good supplier management strategy. Other issues that should be accounted are a reliable source for supplier performance and evaluation as well as developing the suppliers. With the help of common procurement approaches and development projects the supplier relationship is utilised to the maximum.

(Iloranta 2008, 329.)

Supplier relationship management succeeds the best when all the different factors have been taken into account. It is important to consider issues like delivery, packaging, logistics, time management, documentation and re-

porting and communication. In most cases the problems with suppliers are due to the fact that the contract lacks of detailed information about daily supplier management. Selecting a contact person for the buying and selling organisation is essential to ensure the information flow between the organisations.

(Iloranta 2008, 329.)

4.3.1 Supplier relationship development

According to Jeffrey Liker and Thomas Y. Choi actively developing the supplier relations is important. Understanding your suppliers and utilising your suppliers mutual competition has proven to be a very effective way of supplier relationship development. Other development ideas include managing your suppliers to improve their performance and abilities. It's important to keep the managing role to yourself when conducting shared product development projects. The buying organisation should communicate information with determination to selected suppliers.

(Liker & al. 2004, 4).

Understanding the actions and processes of your suppliers is a basis for starting to develop your relationships with them. Supply market intelligence is one the factors that need to be accounted. It explains the mutual competition between competing organisations in the market. With the help detailed supply market understanding, the factors that affect competitive advantage can be identified. The determination of the knowhow of supplier processes and the total cost structure helps to develop supplier relationships.

(Liker & al. 2004, 4).

The buying organisation can imply that they have a deep knowledge about the supply market and supplier presented in the market. This shows that the organisation can evaluate and compare suppliers that will enforce the suppliers to be more efficient and effective. It can also improve the service level of the suppliers.

(Liker & al. 2004, 4).

The best action to improve the supplier's performance is to give clear instructions on what is expected and required from them now and also in the future. Conducting a diverse analysis on supplier's performance will provide a tool to the supplier to develop its actions to a more wanted direction.

(Liker & al. 2004, 4).

4.3.2 Risks with close supplier cooperation

There exist risks with a close cooperation with suppliers. Closing a long-term deal with a supplier can reduce the work that the supplier uses on improving the organisation's competitiveness. Cooperation is usually quite beneficial for the supplier since it can cause cost savings. This can lead to a situation where the supplier will improve its gross margin while the organisation doesn't improve its competitiveness in the market.

(Iloranta 2008, 317-321.)

Another risk is the increased dependency on the supplier. This benefits the supplier since it can use its power to control the buying organisation. These kinds of situations are common when concerning investments. For example a supplier for devices can invest in a specialised machine that manufacturer's the customised components for the buyer. This will increase the competitive advantage of the supplier against its competitors since it can provide a tailored product for its customers to satisfy the needs.

(Iloranta 2008, 317-321.)

One of the issues to consider is the starry-eyed default that the goals for the supplier and buyer are similar and parallel. Focusing to small details can help to notice the differences between the supplier's and buyer's point of views. Before the deal is sealed the supplier will present an image that is a bit better than it will be in reality. After the contract has been signed, a big gap between the supplier's and buyer's views can raise to the surface.

(Iloranta 2008, 317-321.)

Both the supplier and buyer have their own interests in mind. These interests can change over time when the organisation's situation changes for example an owner switch in an organisation. One of the interests of the buyer organisation is to reduce costs when on the contrary the supplier's interest lays on protecting the gross margins. Starting a long-term relationship with a supplier, a thorough research on the supplier's background, owners, strategies and its position on the market is needed.

(Iloranta 2008, 317-321.)

The loss of pressure for efficiency improvement that is caused by competition is one source of problems that might occur with the supplier. The lack of losing the customer decreases the need for improving the efficiency of the buying organisation. The supplier uses more time on the new customer's and satisfying their needs and the search for new growth which will fit with the goals of the supplier. In many cases the supplier organisation's reward systems are built up for looking for new customers rather than staying in contact with the existing ones.

(Iloranta 2008, 317-321.)

Another factor is the surveillance of supplier's costs and performance which can become quite difficult. The cost structures of another organisation are hard to access. The price of the product or service is usually the topic of discussion between the supplier and buyer. The cost structures of the supplier are less visible and evident and usually the supplier doesn't want to communicate them to the buyer either because it can worsen the purchasing power of the supplier.

(Iloranta 2008, 317-321.)

The benefit of the long-term relationships with the supplier in this case is the fact that the supplier will learn about the real needs and requirements of the buyer. This can result is optimisation and rationalisation of its own operations. The evaluation and measurement of these sorts of activities is

hard which makes it a gain for the supplier since it can hide from the buyer and use it as an advantage for its own good.
(Iloranta 2008, 317-321.)

The open books principle is a common strategy with the long-term relations concerning accounting and reporting. One of the problems is that it is easy for the supplier to hide large amounts of money behind single numbers. Controlling human resources accounts is difficult due to the fact that reporting can prove to be distorted which is hard to identify by the buying organisation.
(Iloranta 2008, 317-321.)

The open books system encourages the use of cost plus pricing which enables the supplier to charge an additional coverage. This principle applies well in some circumstances but it involves risks as well. It can cause the supplier to utilise its power and provide the buyer with non-efficient and non-qualified employees that will reduce the performance effectiveness.
(Iloranta 2008, 317-321.)

One risk with a close supplier relationship is the difficulties with managing the direction of the development of the supplier. The goals and targets for the supplier and buying organisation might be similar and parallel when the contract has been signed but they might change due to organisational changes. Long-term development is connected to organisation's own qualifications and situations. If the long-term customer doesn't fit to the new strategy of the organisation, the service will deteriorate when time passes.
(Iloranta 2008, 317-321.)

4.4 Correlation with corporate strategy

The procurement strategy should be aligned with the corporate strategy and its objectives. This will ensure that the efficient procurement methods are also defined in the corporate strategy which will help with measuring and monitoring the effectiveness of procurement.
(Moczna 2008, 25).

4.4.1 Goals and targets

In most cases the corporate objectives are derived from the organisation's mission and tend to be very general descriptions about the goals and targets for the organisation. These objectives should be determined more in detail to direct the organisation's functions in a desired manner. We can look this through with an example.
(Iloranta 2008, 445.)

The corporate objective could be ensuring the cost efficient processes of procurement. This could be then defined more precisely in a 2-year action plan. The objectives of this plan could be to aim at 2% cost reductions in procurement in the named categories. Another objective of the action plan could present a model for changing and developing the procedures of the

procurement function so that less than half of the time of the procurement staff would go to operational purchasing. Operational processes are boosted through cooperation with suppliers which is another objective. Long-term supplier relationships are targeted to receive new target prices for the named 10 to 15 categories.
(Iloranta 2008, 445.)

When determining and setting procurement strategy objectives it is important to keep in mind that the objectives vary due to different factors. Factors to consider include time, organisational levels, different units of the organisation, different product categories and the stage in the life cycle process.
(Iloranta 2008, 445.)

Vertical and horizontal balance with the organisational objectives needs to be achieved as we can see in Figure 2. The verticality in this context means that the objectives are clear and visible and accessible for all the staff in all the organisational levels. The horizontal view will provide information about how the end product, in most cases satisfying the end customer, will be executed.
(Neilson & al. 2008, 85-86).

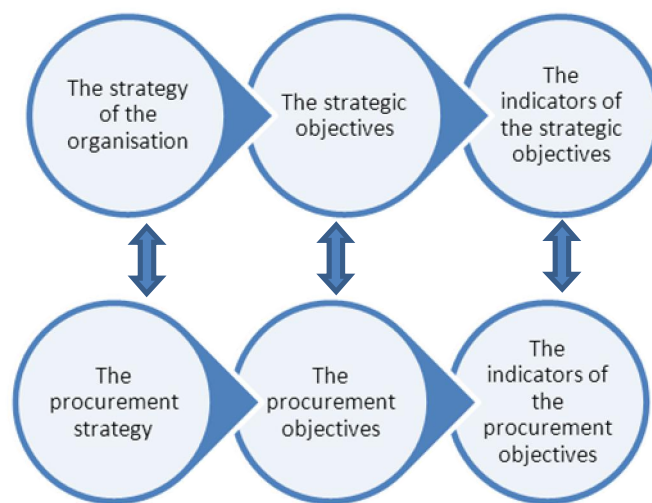


Figure 2 The relationship between corporate strategy and procurement strategy. Iloranta 2008, 445.

4.4.2 Brand

Brand and supply chain strategies are very similar when it comes to communications. The marketing function needs to create a sustainable brand

image through establishing long-term relationships with its customers. This also applies to procurement, the procurement staff needs to build relationships with the suppliers to ensure a continuous flow of goods and services. This results in a corporate brand that is dependent on relationship throughout the supply chain.
(Purchasing Practise 2011).

Innovation is an important part in the different stages of product development to ensure that quality products are provided to end customers. Integrating brand and procurement management processes will provide a tool to access information about customer needs, experiences and preferences. The procurement function should be involved in the early stages of brand building to communicate the information that is supplier dependent. These actions will result in differentiation of the brand from the competitors in the market.
(Purchasing Practise 2011).

The organisation's brand is very visible in all the touch points it has with them. That's why the promotion of behaviours that will satisfy the customers should be done throughout the supply chain. This will create a link between the organisation's customers and suppliers. The importance of the touch points can be explained through the customer's perceptions about the organisation that will provide a basis for brand creation and management.
(Purchasing Practise 2011).

In many cases in the service industry, the organisation's biggest point of customer contact turn out to be their suppliers. Examples of customer points where the procurement function can influence are customer collection, service delivery, and product packaging and order confirmation.
(Purchasing Practise 2011).

The procurement and brand functions need to be determined what the most influential touch points are when brand growth is concerned. The customer relationships can be improved by implementing cooperation with brand and procurement management. Through better relationships the improvements in market share, sales and customer loyalty can be achieved.
(Purchasing Practise 2011).

When the organisation's corporate brand values are related to the requirements that are asked from the suppliers it will provide a mean to support the brand. This can be done for example by implementing a code of conduct for the suppliers that they must follow. The code of conduct can include things such as fair working conditions and high environmental standards.
(Purchasing Practise 2011).

It's important to take into account that the whole organisation is responsible for building a good brand for the organisation. Although the marketing and sales staff would do an excellent job if the other functions in the organisation are not working properly it will evidently cause problems with the brand image. Therefore the touch points should be accounted in all the

different functions of the organisation to ensure that the perceptions of the customer are met.
(Purchasing Practise 2011).

4.5 Process view

The procurement process varies between different organisations. In the case of the procured item being a new product, the procurement process will take more time from the buyer since many phases are not defined yet. Achieving the effective and efficient management of the purchasing process can be implemented through determination of the staffing in all the levels of the organisation properly. Offering professional training and growth opportunities for the staff will help to increase the effectiveness and efficiency of the purchasing process.
(Moczna 2008, 33-34).

The purchasing process includes various steps from identifying the user need to requesting and evaluating offers from different suppliers to receiving and paying for the product. The different steps in the purchasing process are identified in Figure 3.
(Moczna 2008, 33-34).

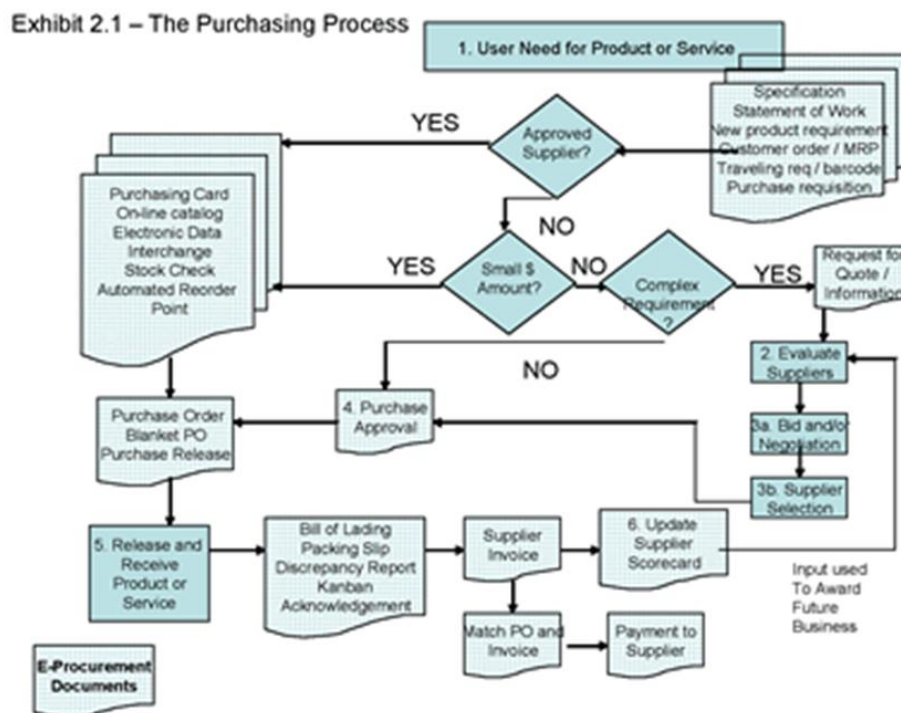


Figure 3 The purchasing process. Moczna 2008, 46.

4.5.1 E-procurement

Implementing e-procurement has its definite advantages. The research conducted by Waters shows that significant cost savings can be generated

by using e-procurement as it is shown in Table 1. Waters found that a 400 per cent return on investment can be achieved by implementing e-procurement systems.
(Moczna 2008, 46).

Table 1 Savings by moving to e-procurement (costs in € per transaction). Moczna 2008, 46.

Create a detailed requirement	17,2	9,3
Approval process	5,5	2,7
Check requirements	20,2	0
Order processing	54,4	6,8
Receiving	10,3	2,9
Internal delivery	35,0	13,0
Payment process	23,6	0,6
Total	166,2	35,3

One of the advantages is procurement automation. With the help of procurement automation, buyer's time used in operational purchasing will decrease and their resources can be utilised for example to strategic tasks. By using e-procurement, an opportunity to outsource some of the purchasing activities becomes possible. For example, the purchasing activities can be outsourced to a supplier by using an electronic catalogue.
(Moczna 2008, 46).

4.6 Conclusion

When measuring procurement effectiveness, it's important to include a wide range of different factors. Among these factors are the strategic and financial influence, quality of people and skills level and transactional versus value added activity. Other factors to consider are integration with business operations, management of suppliers, innovation and risk management.
(Duggan, 2010).

Depending on the role of the procurement function, the effectiveness of procurement is determined. In the case of the role being weak and non-participative, the effects stay quite low. On the contrary when the procurement role is strong, the effectiveness becomes higher and more visible as Table 2 shows.
(Duggan, 2010).

When assessing the effectiveness of the procurement function, one of the first things that should be accounted is the strategic influence. This means the level of participation and involvement from the procurement function to the strategic decisions made in the organisation. Another factor to consider is the financial influence the procurement function has towards the

organisation. This is determined by the amount of non-pay roll spend and contract compliance.
(Duggan, 2010).

Key parameters for identifying the quality of people and skills level are the development and training programs organised for the procurement staff. Whether the procurement function is transactional or value added activity will affect the effectiveness of the procurement in the organisation. This includes all the different areas of procurement; operational, tactical and strategic and how they account to the procurement processes.
(Duggan, 2010).

The cooperation with organisation's other functions and processes as well as with stakeholders relates to how effective the work of the procurement function is. How the supplier management is organised in the organisation is a definite factor to take into account. The processes dealing with contracting and communication and cooperation with the suppliers are issues that will directly have an impact on the effectiveness.
(Duggan, 2010).

When innovation has a strong role in the procurement function, the effectiveness can be increased for example through innovative product development with the supplier. Continuous identification of risks and managing and controlling them and how well this performed will influence the results of the effectiveness.
(Duggan, 2010).

Table 2 Assessing the effectiveness of the procurement function. Duggan 2010.

Strategic influence	
Procurement has only a small or no role in the decision making process.	Procurement assesses a strong role in the decision making process for the organisation. It actively defines and manages the strategic suppliers of the organisation.
The procurement function does mostly operational procurement and lacks of power in spending decisions.	Procurement is largely involved in all the decisions concerning procurement. It also has a representative in the board meetings.
Financial influence	
The procurement function has only little control over contract compliance accounting with 15%. The control over non-payroll spend is around 30%.	Most of the non-payroll spend is managed by the procurement function. The contract compliance accounts to 80% of the handling done by the procurement.
Quality of people and skills level	
Procurement staff is considered as low importance and has only few opportunities for development and training.	Procurement is seen as a high importance function and concentrates on organising development and training programs for their staff.
Transactional versus value added activity	
The procurement function is organised across transactional processes which involves mostly operational procurement activities.	The key procurement projects and key suppliers are identified and actively managed and developed by the procurement function. Large investments on systems are done to provide a mean to do transactions.
Integration with business operations	
The integration and interactions with organisation's other processes, functions and stakeholders are minimal.	The integration with the stakeholders is done on a regular basis to ensure the improvement of cost and service delivery. Procurement actively participates on the cross functional cooperation done between the different functions and processes in the organisation.
Management of suppliers	
The lack of setting and defining of key performance indicators and supplier service level agreements.	The key performance indicators are put into place and are managed and monitored by a grouping of stakeholders, procurement and suppliers.
Supplier performance is not tracked and no actions are taken when issues on poor supplier performance arise.	Supplier performance is monitored and controlled and in the case of poor performance actions are taken. A thorough research is conducted to identify the weaknesses in the supplier's and organisation's performance.
The setting of contracts is one of the tasks of procurement function. Procurement staff doesn't possess skills to manage the contract post award.	Procurement staff has expertise on contract management and on a regular basis deals with contract post awards. Ensuring good business results, the procurement function stays in contact with the suppliers.
Innovation	
The procurement function has a small role in the innovation processes of the organisation.	Innovation is taken into account through integrating key suppliers to product development. Regular supply market checks and search for new talents for future developments is implemented.
Risk management	
Business risks are not defined and accounted in supply contracts.	Risks in supply contracts are defined and monitored and controlled by procurement.

5 MEASURES OF SUCCESS OF PROCUREMENT EFFECTIVENESS

5.1 DuPont model

Evaluating the development impacts of the organisation's procurement can be done applying DuPont model. It measures the financial impact of procurement on the organisation's finances. The model was originally developed to calculate the return on net assets which is one of the most used parameters for measuring the profitability of the organisation. The return on net assets explains how effective the use of capital is. (Iloranta 2008, 107.)

With the help of DuPont analysis, the effects of cost savings on the organisation's profit and profitability can be determined. The model also highlights the issues that affect the profit margin that need to be considered when developing the procurement function. These issues include things like lack of procurement policies or uncontrolled supplier or price management. (Iloranta 2008, 107-108.)

As Figure 4 shows, procurement affects to the profitability in all the different ways mentioned in DuPont model.

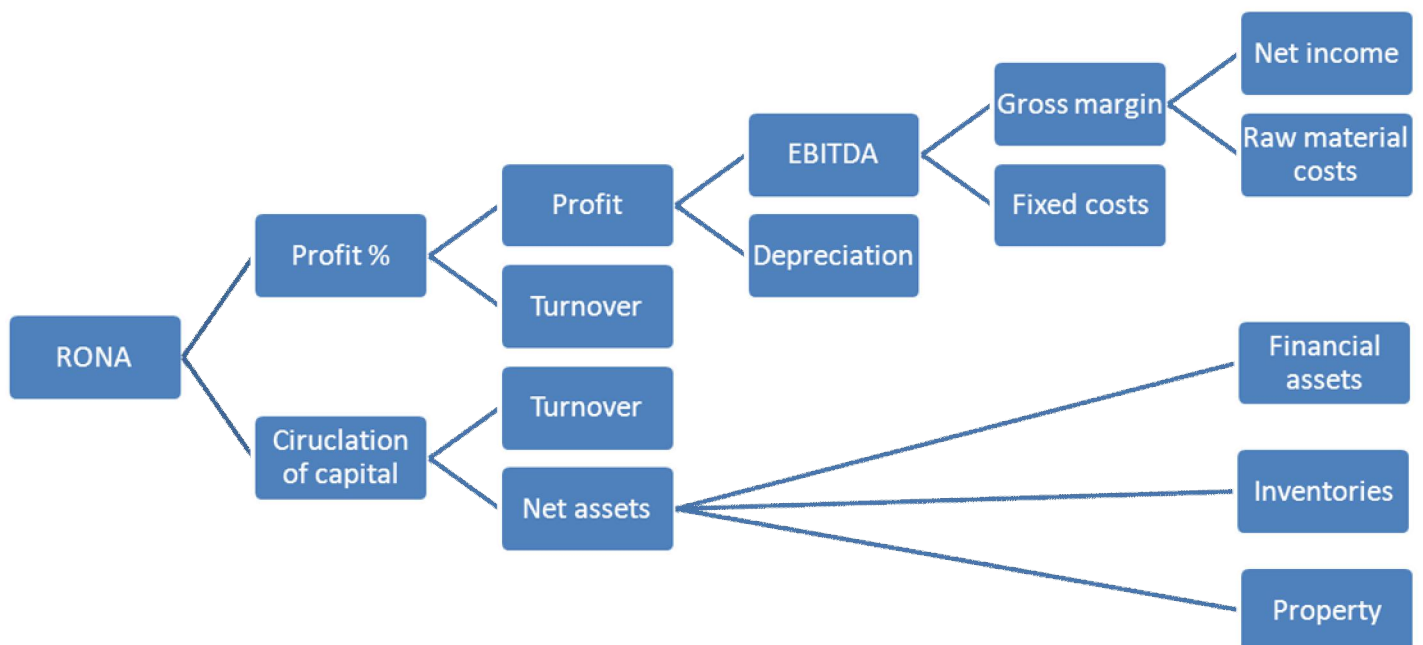


Figure 4 DuPont model and effects of procurement on organisation's profit and profitability. Iloranta 2008, 108.

DuPont model offers a tool to explain the relation with planned and executed actions to the effects on the organisation's profitability. The system will detect the ramification effects of the executed actions. An example of this is looking into the development possibilities with the suppliers and this way reducing the total costs of procurement.
(Iloranta 2008, 109.)

When placing profitability objectives for the organisation, DuPont system helps to define the milestones for each function or process. DuPont model proves to be useful when it comes to investing decisions. It helps to compare the available options and evaluate the profitability of the investment venture.
(Iloranta 2008, 110.)

5.2 Performance benchmarking

The term benchmarking means comparing the organisations functions to another organisation. In most cases the comparisons are done towards the top organisations. One of the aims of benchmarking is imitating and questioning your own business processes. Benchmarking analysis provides a good tool to develop the organisation's processes and quality systems. The analysis will detect the weaknesses and help to create development ideas and projects to improve them.
(Kozak 2004, 2).

When the organisation is creating its development projects for improving its processes through imitation, it's important to remember that the imitation cannot be executed directly. Issues such as the organisation's own situation, resources, knowhow, the business environment and previous development impose the best direction for development.
(Kozak 2004, 2-5).

The benchmarking process starts with identifying the problems in your organisation that you would like to develop and improve. After that the organisation should conduct a search of appropriate organisations that have similar processes that serve as a data source.
(Kozak 2004, 2-5).

The process continues with collecting and analysing the data and determining how big the gap between the processes of the top organisation and your organisation is. Through this the organisation can define the process differences and start to build a new development plan that will fit the organisation's business environment. The last stages in the process include implementing the new development plan and reviewing how it works and whether things should be recalibrated to achieve better results.
(Kozak 2004, 2-5).

5.3 Supplier performance

Measuring supplier performance will give information about how well the supplier is satisfying the needs of the customer and how well they follow

the directions and instructions given to them. A long-term documentation and reporting about the supplier performance provides a tool to compare the changes over time. Also customising the measurement systems to correspond the characteristics and importance of the particular supplier makes the analysis more reliable.

(Iloranta 2008, 336.)

The organisation needs to build an action plan for poor supplier performance. Without the feedback system, the supplier is not likely to change its practises and the organisation will suffer from poor supplier performance that will reduce the cost efficiency of the procurement function. The depth of the measurement system depends on the quality and type of the supplier relationship. There are four different categories for supplier relationships.

(Iloranta 2008, 336.)

The first category includes the simplest and one-time type of supplier relationships. The supplier monitoring in this case can be as simple as checking whether the basic goals and targets are met. These goals can include issues like quality of products, correct order amounts and on-time delivery. Another factor that can be considered with the simple supplier relations is the customer oriented service. This can contain things dealing with communication issues and attitude of the supplier.

(Kulmala, 2004, 68).

The second category involves supplier relationships that are longer-term and more complex. When the supplier relations present the second category the measurement system should also be more profound. Ability to solve problems and deal with poor supplier performance needs to be a part of supplier performance measuring. Also the continuous development for improving the level of services should be implemented.

(Kulmala, 2004, 68).

When the relationship is long-term and involves mutual development projects, it belongs to the third category. In this case, there should be a plan for decreasing costs in place. Also through mutual development projects, the common processes can be boosted and this way the supplier performance tracked.

(Kulmala, 2004, 68).

When the relationship with the supplier is based on a long-term development relationship which involves innovation it is classified as the fourth category. In this category the supplier performance measurement system is concentrated on developing mutual innovations and technical capacities. Another measurement is how well the development of resources and capabilities is aligned with the common objectives.

(Kulmala, 2004, 68).

The profound supplier performance measuring and monitoring takes time and therefore it is important to focus it only on the important suppliers. Categorising the suppliers will help to determine which are the important suppliers in the different levels of the organisation and thus worth of using

resources and time for. A supplier scorecard can be utilised to monitor and report supplier performance with the most important suppliers. Issues such as product quality, on-time delivery and cooperation can be analysed. (Kulmala, 2004, 68).

The supplier types can be also categorised for example in a following way; normal suppliers, subcontractors, subsystem suppliers and family members. The first type is the normal supplier which provides standard products and services. There is no need to concentrate on measuring this category and that's why automated measuring systems can be applied. More resources and time for implementing the measurement system is used when moving towards the family member type suppliers. (Kulmala, 2004, 68).

Categorising the type of the supplier relates directly to the development model made by Kraljic. Through the model the suppliers can be identified to routine product suppliers, volume product suppliers, bottleneck suppliers and strategic item suppliers. (Kulmala, 2004, 68).

It is important to remember that also factors such as relative size and mutual power positions have an influence on the supplier categorisation. For example when the organisation is big in size, the geographical extent like local-global can be taken into account. (Kulmala, 2004, 68).

5.4 ABC analysis

ABC analysis is used to categorise inventories of the organisation. It will identify the products that have the most influence on the total costs of the inventory. By implementing the ABC analysis, the results can be used to define the appropriate means for managing and controlling each inventory category. An example of the ABC analysis can be seen in Figure 5. (Viale 1996, 36).

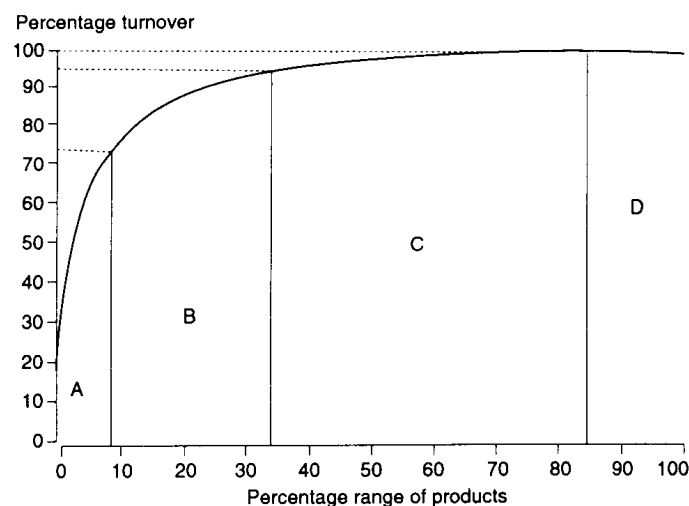


Figure 5 An example of ABC analysis reporting tool. C.Y.D & Ridgway 1995, 13.

The first class presents the A category which is seen as the most important inventory category. The items in this category constitute the biggest share in the total inventory costs. Around 15 % of the organisation's products with an 80% materials usage can be categorised to this class. The monitoring and controlling of this class is constant and it is executed by purchase and store management.

(Bhat 2009, 162).

Due to frequent ordering and deliveries, safety inventory is not needed with the A class items. Continuous follow ups and expediting is used to ensure the availability of products. Accurate value analysis is conducted. The weekly monitor reports provide a tool to make accurate forecasts for materials planning.

(Bhat 2009, 162).

The class B presents the intermediate category which accounts for 35% of the inventory items. It has a 15% share in the total costs of inventory management. Only periodic monitoring and controlling is needed with this category.

(Bhat 2009, 162).

The products of B class have small safety stocks due to an ordering schedule of once in every three months. The monitoring and controlling can be done by the middle management that can conclude their findings on a monthly basis.

(Bhat 2009, 162).

The items in the class C are quite insignificant but have the largest volume with a 50% share of the inventory items. The monetary value is very low with these products, it only accounts to 5% of the total costs. The monitoring is quite loose and there is no need for it to be constant.

(Bhat 2009, 162).

The purchasing of class C items is done through bulk orders so it is important to keep high safe stocks in case of problems with the delivery. The controlling is done on a quarterly basis and it can be made by anyone in the organisation. Rough estimates are given for the materials planning due to large volumes. In exceptional cases, follow ups and expediting can be used.

(Bhat 2009, 162).

5.5 Balanced scorecard

The aim of the balanced scorecard is to convert the organisation's strategy to specific actions and measures. Balanced scorecard provides a tool to evaluate both the financial and operational measures. The operational part looks at internal processes, customer satisfaction, organisation's innova-

tion processes and improvement activities. It can be said that the operational measures present the drivers behind the future's financial measures. (Kaplan & Norton 1992, 71.)

The balanced scorecard presents an opportunity to look at the performance from different perspectives simultaneously. The most important perspectives that are accounted with the balanced scorecard analysis are the customer perspective, internal perspective, innovation and learning perspectives and the financial perspective. All of the four issues are linked to each as the figure 6 indicates. (Kaplan & Norton 1992, 72.)

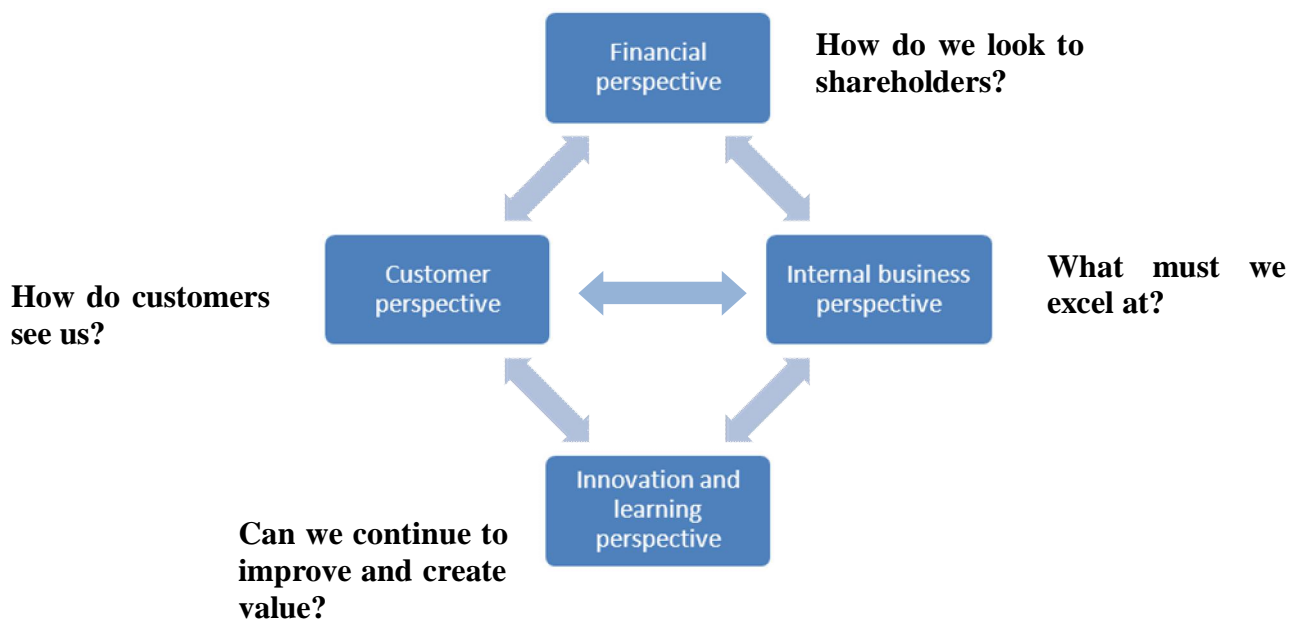


Figure 6 The balanced scorecard links performance measures. Kaplan & Norton 1992, 72.

The balanced scorecard serves the needs of the manager well. It summarises the most common factors in the competitive agenda of the organisation. The factors include becoming customer oriented, shortening response time, improving quality, encouraging teamwork, reducing new product launch times and managing for long-term. (Kaplan & Norton 1992, 72.)

Controlling sub-optimization can be achieved through implementing the balanced scorecard. The analysis provides information on how a change in one of the organisation's functions will affect the other functions. This will reduce the likelihood of improvements implemented in one function happening in the expense of another function or process of the organisation. (Kaplan & Norton 1992, 73.)

The first critical issue to consider is the customer perspective. In many cases, the corporate objectives are tightly linked to the customer orientation efforts and therefore it has become a priority for the management of

the organisation as well. The issues where customer's interests lay on are time, quality, performance, the level of service and costs.
(Kaplan & Norton 1992, 73.)

The first factor, time, can be measured through lead time for existing and new products. The analysis can be implemented internally in the organisation. For existing products the lead monitoring can be done by checking how long is the process of receiving an order and actually delivering the order to the customer. On the contrary for the new products, the measuring can be achieved through evaluating what is the time frame from product definition to marketing the products in the market.
(Kaplan & Norton 1992, 73.)

The quality measurements are done by the customer and they include checking the amount of defect products in the delivery. On-time deliveries can be another factor in the determination of quality measurements. I will show how accurate the delivery forecasts are made by the organisation. The service and performance evaluate how well the organisation is creating value for the customer.
(Kaplan & Norton 1992, 74.)

The goals for time, quality, performance and service should be identified and then transferred into more specific measures. For example a general goal for performance could be becoming a preferred supplier and the measurement for this could be achieved by analysing share of key accounts' purchases.
(Kaplan & Norton 1992, 73.)

Costs are one of the factors that are concerned with the customer perspective. The price is not seen as the only parameter for costs. Other issues that are involved are ordering and delivering arrangements, paying for materials and storing the materials to mention a few. The customer might choose the more expensive supplier knowing that the delivery will be defect-free. That's why, taking the customer's perspective is crucial for the organisation to succeed.
(Kaplan & Norton 1992, 74.)

Internal business perspective presents the second factor of the balanced scorecard analysis. Using the information gathered in the customer perspective analysis as a basis for starting to build the internal processes to meet the customer's expectations. The processes and functions of the organisation that are closely linked to customer satisfaction should be accounted in the internal business perspective analysis.
(Kaplan & Norton 1992, 75.)

The most common processes include cycle time, quality, employee skills and productivity. Identifying the core competencies and vital technologies needed to operate will help to measure the effectiveness of internal processes. Again the general goals need to be defined into detailed measures for the organisation. For example if the general goal is manufacturing excellence, the measures to be taken can include issue with cycle time, unit cost and yield.

(Kaplan & Norton 1992, 75.)

A well organised information system provides a valuable tool for the managers to monitor how the internal business perspective measures are working. It helps to disaggregate the information and therefore it's easy for the managers to find the source of the problem. This can be then traced down to a single business process and to a single employee.

(Kaplan & Norton 1992, 75.)

The third part is the innovation and learning perspective. The intense competition in the markets forces the organisation's to continuously improve their existing products and to innovate new ones. How well the organisation is able to innovate, improve and learn relates directly to the value of the organisation.

(Kaplan & Norton 1992, 75.)

A general goal for innovation and learning could deal with defining the best time to market new products. The relationship between product launching and the competition in the market are specific measurements that are derived from this goal. Another specific measurement that could be used is the per cent of sales of the new products.

Many organisations want that their improvement and development processes to be continuing and therefore they implement specific improvement goals for their existing processes.

(Kaplan & Norton 1992, 75.)

Profitability, growth and shareholder value are common goals when defining the financial perspective. Measures for success can be used cash flow and sales growth statements as well as the operating income and increased market share. The return on equity provides a measure for evaluating the financial perspective.

(Kaplan & Norton 1992, 77.)

The importance of the financial measures in performance evaluation is strongly criticised because of the inadequacies. For example when conducting shareholder value analysis, the focus is on forecasting future cash flows rather than looking into the activities and processes behind the cash flows.

(Kaplan & Norton 1992, 77.)

On the contrary the financial perspective is important for two reasons. The first one is that the quality management program can be actually improved through using the financial perspective measurements.

(Kaplan & Norton 1992, 77.)

It's important to remember that a well-structured balanced scorecard doesn't necessarily mean that it will create a winning strategy for the market. With the help of the balanced scorecard analysis the organisation can translate organisation strategy into specific objective measures. The ability to transfer the improved operational performance into an improved financial performance is a difficult task for the managers to implement.

5.6 Spend analysis

With the help of spend analysis, the organisation can analyse, collect and classify expenditure data which can result in cost savings. Contract compliance and maverick spending can be monitored by conducting spend analysis. The main idea of the spend analysis is to determine how the procurement costs are divided among the products that are purchased and how the costs categorise between the suppliers. (Enporion Inc. 2008, 4).

The spend analysis will provide a tool that can be used to increase visibility and transparency. Correct pricing, rebates and volume discounts are factors that can be reported by implementing the analysis. The visibility issue applies inside the organisation as well. By implementing the spend analysis the organisation can monitor whether the buyers are following the corporate policies and using the appropriate contractual terms with suppliers, pricing, payment and purchase value commitments. The total costs of inventory management can be reduced with spend analysis. This is achieved with reorganising and consolidating part and material masters. (Enporion Inc. 2008, 4).

Implementing spend analysis is costly due to the fact that an organisation-wide IT system has to be put on place to enable effective and efficient use of spend analysis. Lack of knowledge and knowhow as well as missing availability of a scalable and configurable spend tool are other challenges with implementing spend analysis. In many cases the organisation has many different sources from where spend data is collected and gathered. This can cause problems especially when the categorising is not done in detail so that the information would be helpful. (Enporion Inc. 2008, 4-5).

5.7 The challenges of measuring procurement effectiveness

There is different kind of challenges that the organisation has to face when measuring procurement effectiveness. The first one is the fact that there rarely exists any point of references for the products. This means that it is difficult for the organisation to indicate any market price for product that they are going to purchase. (Iloranta 2008, 437-438.)

The lack of information what the competitors are paying for the same products makes the comparisons for the market price insignificant. Comparisons between different units can be made although the information gathered is still quite limited. (Iloranta 2008, 438.)

Another issue is that although the organisation's own development of prices can be tracked down, it doesn't give information what kind of development of prices the competitors have. (Iloranta 2008, 438.)

The needs and demands of the organisation's procurement function vary between different organisations. This is due to the fact that the volume of procurement differentiates as well as the importance of the procurement function. Also the supplier markets are very different from one to another. The organisational structure of procurement and how it is perceived inside the organisation contributes also to the different needs and demands. This results in that there are as many measurement systems as there are organisations.

(Iloranta 2008, 438.)

The relationship between cause and effect are hard to distinguish and focus. The effectiveness of procurement is hard to split to its own part and it can't be directly measured through the relationship of direct input and output. The position of the procurement function in the supply chain and in the interface of internal processes makes performance effectiveness measuring difficult. The end result can be affected by multiple things that are hard to prove with the cause and effect relationships. These things can consist of issues such as insufficient supplier guidance, poor communication between the organisations or the subcontractor's administrative problems.

(Iloranta 2008, 439.)

For achieving the best procurement performance effectiveness results, the organisation should think from these potentials challenges what are the ones that they could influence.

(Iloranta 2008, 439.)

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